

5



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER OF
PATENTS AND TRADEMARKS
Washington, D.C. 20231

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 12

10 Serial Number: 08/421,810
Filing Date: 04-13-95
Appellant(s): Alexander Conrad et al.

Clifford A Poff
For Appellant

MAILED
APR 04 1997
GROUP 2200

15

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 1-16-97.

(1) Real Party in Interest

20 A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

25 A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. This statement indicates that there are no related appeals and interferences.

(3) Status of claims

The statement of the status of claims contained in the brief is correct.

30 **(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of invention

The summary of invention contained in the brief is correct.

5 **(6) Issues**

The appellant's statement of the issues in the brief is correct.

(7) Grouping of claims

10 The rejection of claims 49-50 and 53-65 stand or fall together in the following groups because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.162(c) (5).

15 The rejection of claims 51-52 stand or fall together in the following groups because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.162(c) (5).

20 The rejection of claims 66-71 stand or fall together in the following groups because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.162(c) (5).

Applicant's statement regarding grouping agrees that the claims stand or fall together in the three groups listed above.

(8) Claims appealed

25 The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

<u>Number</u>	<u>Name</u>	<u>Date</u>
5 4,990,892	GUEST et al.	5-1991
5,363,425	MUFTI et al.	11-1994
3,403,381	HANER	9-1968
5,206,637	WARREN	4-1993

"Understanding Data Communication," Radio Shack, pp 5-2 and 5-12
10 to 5-15, copyright 1984.

(10) New prior art

No new prior art has been applied in this examiner's answer.

(11) Grounds of rejection

The following ground(s) of rejection are applicable to the
15 appealed claims.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 49-50, 53-55, 57-65, 67, and 69-70 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No.

20 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner).

Guest discloses a personnel locating system with transmitters sending bursts to receivers at distinct burst periods to prevent synchronization. Each transmitter uses a
25 different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by

the claiming of person, animal, or equipment in an alternative manner. Each transmitter uses a different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by the claiming of person, animal,
5 or equipment in an alternative manner. Each transmitter in Guest sends at specified periods rather than the varying intervals of claim 49. Guest does not specify using an algorithm.

Mufti discloses an analogous art identification system which includes transmitters having microcontrollers which are provided
10 with software or algorithms to provide the transmitter functions.

Haner discloses a system directed to preventing interferences between transmitters similar to Guest, but uses randomly varying repetition times rather than fixed times.

Regarding claims 49 and 65, it would have been obvious to
15 one of ordinary skill in the art at the time the invention was made to have provided the functions of the Guest transmitter in response to an algorithm or software as described by Mufti since a software programmable device is easier and cheaper to mass produce and provides flexibility because the software can be
20 modified to provide different functions. Alternatively, The transmitter in Mufti could have been modified to send infrared bursts as described by Guest which have advantages over RF transmission such as not requiring FCC licensing. It further would have been obvious to have included randomly specifying the
25 transmission intervals as described by Haner which is advantageous for reducing interference when the number of

transmitters is so large that they cannot each be assigned to a separate transmission interval. It would have been obvious to have specified the random period by an algorithm since the random pulses generator of Haner outputs a pulse at random times which is a representation of a random number provided by a randomizing algorithm and further because Mufti suggest using software or algorithms to provide all the transmitter operating functions (col. 7, lines 4-9) and Mufti describes random intervals for the burst transmission in col. 8, lines 1-3.

Regarding claim 50, Mufti discloses a microcontroller (61) responding to software or algorithms as discussed above.

Regarding claim 53, Guest discloses a unique sixteen bit binary codeword in col. 2, line 20, and it would have been an obvious design choice to extend this to any number of binary bits, such as 20 bits, in order to allow additional unique IDs for additional transmitter units up to 2 raised to the 20th power = 1048576 units.

Regarding claim 54, the 20 millisecond burst is an obvious design choice which is suggested by the 55 millisecond burst period of Guest (cols. 8-9) which is at least of the same magnitude.

Regarding claim 55, the random intervals of Haner is between .5 and 1.5 seconds which would amount to an average interval of about one second.

Regarding claim 57, Guest includes a transmission of two infrared pulses of 5 microsecond duration for a total

transmission (high level) of 10 microseconds in col. 9, lines 50-52) which at least suggest a 10 microsecond flash.

Regarding claim 58, a plurality of receivers with allowable reception range overlap is described in col. 5, lines 1-26 of Guest, and Mufti includes validation aided by a CRC as discussed above.

Regarding claims 59-60, Guest includes an up to date registry and detecting presence and continued present in col. 3, lines 9-24 which corresponds to validating IDs and forming start and stop events when detected and lost.

Regarding claim 61, Guest includes connections between the central computer (44) and the gathering means (34) and it would have been obvious for these to include a plurality of serial ports since such is commonplace in the computer art.

Regarding claim 62, a terminal and keyboard for accessing data are commonplace in the art and are typically provided by a PC or workstation such as the workstation (18) of Mufti discussed in col. 5, lines 28-42 for accessing database (17).

Regarding claim 63, a display means for indicating reports stored at a central computer is commonplace in the computer art and is provided by the workstation of Mufti discussed above and/or the registry discussed in col. 3, lines 1-35 of Guest.

Regarding claim 64, Guest includes a hospital environment with communication to existing nurse stations as discussed in col. 3, lines 9-21 and col. 10, line 66 - col. 11, line 15.

Regarding claim 67, Mufti discloses a CRC error correction

word discussed above.

Regarding claim 69, the CRC of Mufti is considered to be a binary checksum.

Regarding claim 70, the receiver of Mufti validates the CRC
5 (col. 8, lines 59-60), and it is commonplace to validate the CRC by recalculating and comparing the CRC values.

2. Claims 49-65, and 66-71 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent
10 No. 3,403,381 (Haner) as applied above to claims 1, 49-50, 53-55, 57-65, 67 and 69-70 and further in view of US Patent No. 5,206,637 (Warren).

Regarding claims 49-50, 53-55, 57-65, 67 and 69-70 if the algorithm limitation is interpreted to required a microcontroller
15 with memory and microcode, then Warren suggests that such is obvious for the reasons stated below.

Regarding claim 51, Guest, Mufti, and Haner include unique ID's or addresses for the transmitters, and Mufti includes a microcontroller in the transmitter, but Mufti does not specify
20 that the microcontroller includes a memory containing the unique address. Warren discloses an access system with a microcontroller connected to a memory for storing access codes. See col. 4, lines 46-54. It would have been obvious to one of ordinary skill in the art at the time the invention was made to
25 have included the ID stored in memory associated with the microcontroller as taught by Warren in the combination applied

above since this would provide flexible (programmable) ID storage, and it further would have been obvious for this memory to be inside the microcontroller since making elements integral/separable and change in location of parts has been
5 established to be obvious by case law.

Regarding claim 52, Mufti describes that the software instructions of the microcontroller provides for generations of a signal as shown in fig. 9 and col. 8 including a preamble (start bits), a binary ID code, and a CRC (checksum), but does not
10 specify "microcode." Guest includes a unique 16 bit binary codeword with start bit and parity. Warren discloses microcode for providing the instructions of the microcontroller (col. 4, lines 46-50) Therefore it would have been obvious to have included the transmission instructions of Mufti in microcode
15 which is suggested by Warren to be an equivalent terminology for the instructions of the microcontroller of Mufti.

Regarding claim 56, Mufti describes that the software instructions of the microcontroller in the receiver provides for validation of the received codes including the CRC shown in fig.
20 8 and col. 7. but does not specify "microcode." Warren discloses microcode for providing the instructions of the microcontroller (col. 4, lines 46-50) including comparing and validating access codes. Therefore it would have been obvious to have included the receiver instructions of Mufti in microcode
25 which is suggested by Warren to be an equivalent terminology for the instructions of the microcontroller of Mufti.

Regarding claim 71, the receiver in fig. 8 of Mufti includes a microcontroller (82) which provides the validation and Warren teaches microcode as discussed above.

3. Claims 66 and 68 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner) and US Patent No. 5,206,637 (Warren) as applied above to claims 1, 49-65, 67 and 69 and further in view of the "Understanding Data Communications" book by Radio Shack.

The Radio Shack book describes using multiple bits per baud in order to increase the signalling rate on a channel with a limited bandwidth that causes a fixed maximum baud rate. This can be implemented by providing a dibit in which two bits are communicated by each modulated pulse or sine wave depending on the phase shift (position) of the wave as shown in table 5-4 or 5-6. Regarding claim 66, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a dibit in the combination applied above because the Radio Shack book states that this provides advantages such as an increased signalling rate.

Regarding claim 68, it further would have been obvious to have provided the dibit for the CRC for the same reasons discussed above.

(12) New ground of rejection

This Examiner's Answer does not contain any new ground of rejection.

(13) Response to argument

Applicant's argument that the Mufti patent is non-analogous art is not persuasive. Applicant's invention is directed to a locating and monitoring system for a person, animal or equipment and since Mufti is directed to a personal locating and asset tracking system it is clearly analogous art. Applicant points out that Mufti differs from applicant's invention and then incorrectly concludes that this makes the reference non-analogous. Because of these differences, Mufti does not anticipate applicant's claims, but the difference do not make the reference non-analogous and the combination of reference shows that these difference would have been obvious to one of ordinary skill in the art at the time the invention was made. The examiner asserts that the other applied references are analogous and/or within the same field of endeavor because Guest and Warren are directed to locator systems and Haner and the Radio Shack book are directed to data communications which are considered to be within the field of knowledge of the artisan in the wireless locator art. Further, Haner is directed to variation of response time to prevent interference or synchronization between a plurality of transmitters which is reasonably pertinent to the problem being solved by applicant. Therefore the applied references comply with the determination analogous art set forth in In re Wood, 202 USPQ 171, 174.

The argument that unlike Mufti, "applicant's claims 49 and 65 call for the occurrence of each pulse burst in time relative

to the start of each time interval varying under the control of the means responsive to the algorithm and using the unique binary identification code of that transmitter to prevent synchronization with other transmitters" is not persuasive.

5 Claim 49 includes language substantially similar to the above, but claim 65 does not and therefore applicant's argument is not commensurate with the scope of the claims. Also, applicant is reminded this rejection is based on a combination of references and not on Mufti alone. Varying of the interval is provided by
10 the "random" interval discussed below which when provided by a software (algorithm) driven microcontroller as in Mufti is considered to be provided by a means responsive to an algorithm which also provides a binary ID code (92 in fig. 9) which prevents synchronization or interference.

15 Applicant's argument with reference to Mufti asserts that the applicants disclosure does not include "random" intervals for burst transmission but is controlled by an algorithm which is the opposite. This is not persuasive. Mufti discloses transmitting at random intervals in col. 8 line 1 and since all the
20 transmitter functions in Mufti are provided by the microcontroller (61) which operates on algorithms, then the random interval is a variation of the response interval making the microcontroller equivalent to applicant's means responsive to an algorithm to control varying of the interval. To separation
25 from other transmitters, each transmitter microcontroller would require unique information for the random transmission which

would be in binary form and therefore present a unique binary code. Further, the random pulse generator of Haner provides random pulses in a predetermined manner (recur periodically within predetermined time limits in col. 6, lines 29-41) which is
5 equivalent to applicant's means responsive to an algorithm for transmitting bursts at varying intervals for the same purpose of preventing interference or synchronization of a plurality of transmitters. Haner discloses that many techniques for producing random pulses are available. One known technique is to use a
10 pseudo random number generating algorithm responsive to an input code such as a seed. Regarding the means responsive to the algorithm being responsive to an address in memory, such is shown to be obvious by Warren as applied in the rejection of claim 51.

In response to Applicant's argument that the Examiner's
15 conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the
20 time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

Regarding the argument that it is improper to select
25 features, to select features from the prior art to effect results expected from these features is within the purview of 35 U.S.C. §

103. See In re Skoner, 186 USPQ 80 (CCPA 1975).

In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969. In this case, Haner discloses varying the response times of different transmitters to solve the problem of interference or synchronization which is the same problem solved by applicant. Where it is not practical to synchronize the multiplexing of the transmitters to particular time slots for each transmitter as in Guest or where there are too many transmitters to provide separate time slots for each, the technique of Haner minimizes the probability that signals will collide.

Applicant's assertions that the references are non-analogous, that hindsight is used and that the references themselves must provide some teaching of the combination are not persuasive for the reasons stated above.

Serial No. 08/421,810
Art Unit 2211


-14-

For the above reasons, it is believed that the rejections
should be sustained.

Respectfully submitted,

Edwin C. Holloway
03-29-97

5


EDWIN C. HOLLOWAY, III
PRIMARY EXAMINER
GROUP 2200

CLIFFORD A POFF
P O BOX 1185
PITTSBURGH, PA 15230-1185